

**BI-DIRECTIONAL TRANSCEIVER MODULE BASED ON SILICON OPTIC
BENCH**

ABSTRACT OF THE DISCLOSURE

A bi-directional transceiver, integrated module based on a silicon optical bench is provided, which comprises at least a laser diode, at least a signal detector, at least a thin film filter, at least an optical lens, an optical fiber and an SiOB. As the optical signal of specific wavelength can be reflected or inserted by thin film filter, the module has functions of a wavelength division multiplexer and a bi-direction transceiver. Furthermore, the optical lens improves the coupling efficiency between the laser diode and the optical fiber. On the other hand, a plurality of optical elements are integrated on the same SiOB. Hence, only a single optical fiber is used and optical signals of multiple wavelengths can be handled simultaneously.